

## **REMARKS**

This paper is being provided in response to the Office Action dated April 6, 2006 for the above-referenced application. In this response, Applicants have amended claims 1, 2, 6-13, 17-19, 23-30, and 34 in order to clarify that which Applicants deem to be the invention. Applicants respectfully submit that the amendments to the claims are supported by the originally filed application. See, for example, Figure 10 and the discussion beginning on page 22, line 18.

The rejection of Claims 1, 5-7, 9-11, 16-18, 22-24, 26-28, 33, and 34 under 35 U.S.C. 102(b) as being anticipated by Steward, et al.: "The Chimera II: A Real-Time Unix-Compatible Multiprocessor Operating System For Sensor-Based Control Applications" (hereinafter "Steward") is hereby traversed and reconsideration thereof is respectfully requested in view of amendments to the claims contained herein.

Claim 1, as amended herein, recites a method of switching during run time from a first scheduler to a second scheduler for a multitasking system for a processor. The method is recited as including choosing the second scheduler from a plurality of schedulers, where at least one of the plurality of schedulers selects processes to be run from a plurality of runnable processes different from the plurality of schedulers and where choosing the second scheduler is based on parameters that vary according to run time conditions. The method is also recited as including setting, during a context switch operation, a program counter to an address corresponding to code of the second scheduler and the processor executing code of the

second scheduler at an address corresponding to the program counter. Claims 5-7 depend from claim 1.

Claim 9, as amended herein, recites a method of scheduling tasks in a multitasking operating system. The method includes using a first scheduler to schedule tasks, choosing a second scheduler from a plurality of schedulers, where at least one of the plurality of schedulers selects processes to be run from a plurality of runnable processes different from the plurality of schedulers and where choosing the second scheduler is based on parameters that vary according to run time conditions. The method also recites switching, during run time, from using the first scheduler to schedule tasks to using the second scheduler to schedule tasks. Claims 10, 11, 16, and 17 depend from claim 9.

Claim 18, as amended herein, recites computer software in combination with a computer readable medium that switches, during run time, from a first scheduler to a second scheduler for a multitasking system for a processor. The software is recited as including executable code, provided on a computer readable medium, that chooses the second scheduler from a plurality of schedulers, where at least one of the plurality of schedulers selects processes to be run from a plurality of runnable processes different from the plurality of schedulers and where executable code that chooses the second scheduler uses parameters that vary according to run time conditions. The software is also recited as including executable code, provided on a computer readable medium, that sets a program counter to an address corresponding to code of the second scheduler and executable code, provided on a

computer readable medium, that causes the processor to execute code at an address corresponding to the program counter. Claims 22-24 depend from claim 18.

Claim 26, as amended herein, recites computer software in combination with a computer readable medium that schedules tasks in a multitasking operating system. The software is recited as including executable code, provided on a computer readable medium, that uses a first scheduler to schedule tasks, executable code, provided on a computer readable medium, that chooses a second scheduler from a plurality of schedulers, where at least one of the plurality of schedulers selects processes to be run from a plurality of runnable processes different from the plurality of schedulers and where executable code that chooses the second scheduler uses parameters that vary according to run time conditions. The software is recited as also including executable code, provided on a computer readable medium, that switches, during run time, from using the first scheduler to schedule tasks to using the second scheduler to schedule tasks. Claims 27, 28, 33, and 34 depend from claim 26.

Steward discloses a multiprocessing operating system that may be used for a real-time control system. Steward discloses one of the features included with this operating system is "user redefinable" schedulers. See, for example, the Abstract, page 3 at approximately the middle of the page, page 4, four lines from the bottom, page 6 at approximately the middle of the page, and the bottom of page 15. For general discussion regarding the schedulers used by Steward, see the bottom of page 13, the second bullet in section 4.2 on page 14, and sections 4.2.1 and 4.2.2 beginning on page 15.

Although Steward generally discloses a user redefinable scheduler, Steward does not teach any mechanism at all for accomplishing this, except, arguably, Steward's vague reference to "hooks" at the bottom of page 15. Steward certainly does not disclose switching from a first scheduler to a second scheduler during run time. In contrast, all of Applicants' independent claims, as amended herein, recite switching from a first scheduler to a second scheduler during run time. As mentioned on page 23, lines 4-8 of the originally filed specification, allowing run time swapping of schedulers (distinguished from run time swapping of tasks) avoids significant overhead associated with other scheduling schemes.

It is not clear from Steward how a "user redefinable" scheduler would be employed. The reference to "hooks" could possibly suggest that a particular scheduler could be defined at compile time and that, during run time, the particular scheduler is used. Of course, this is very different from the present claimed invention, which specifically recites switching from a first scheduler to a second scheduler during run time. In any event, Steward does not show, teach, or suggest the recited feature of switching from a first scheduler to a second scheduler during run time. Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

The rejection of Claims 2, 3, 8, 12-14, 19, 20, 25, and 29-31 under 35 U.S.C. 103(a) as being unpatentable over Steward and further in view of U.S. Patent No. 5,630,130 to Perotto (hereinafter "Perotto") is hereby traversed and reconsideration thereof is respectfully requested in view of amendments to the claims contained herein.

Claims 2, 3 and 8 depend, directly or indirectly, from Claim 1, discussed above.

Claims 12-14 depend, directly or indirectly, from Claim 9, discussed above. Claims 19, 20 and 25 depend, directly or indirectly, from Claim 18, discussed above. Claims 29-31 depend, directly or indirectly, from Claim 26, discussed above.

Steward is discussed above.

Perotto discloses a multitasking controller having task storage means (2) for storing up to N tasks (P0,P1,P2,P3) where each task comprises a sequence of instructions. The controller also includes a microprocessor for processing, by time-sharing, a plurality of such N tasks, and a random access memory (12) for storing variable data created and used by said microprocessor. The microprocessor further includes a scheduler (7) realized in hardware for controlling the use of the microprocessor or by such processes, and program counter storage means for storing N program counters (Pc0,Pc1,Pc2,Pc3) each for use by the scheduler (7), which is able select a different one of the program counters (Pc0,Pc1,Pc2,Pc3) when the task processed by the microprocessor is changed without the transfer of data from the random access memory (12).

Applicants respectfully submit that, the deficiencies of Steward with respect to independent claims 1, 9, 18, and 26 are not overcome by the addition of Perotto, especially since Perotto discloses a *single* scheduler that schedules one of the four disclosed tasks (P0, P1, P2, P3). None of the tasks P0, P1, P2, or P3 of Perotto are themselves schedulers and all of Applicants' independent claims specifically recite in some form that the schedulers are

different from the tasks scheduled by the schedulers. Accordingly, Applicants respectfully request that this rejection be reconsidered and withdrawn.

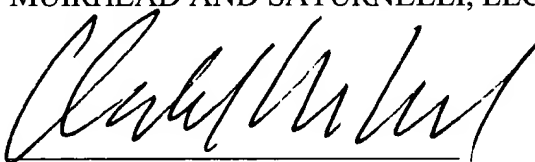
Based on the above, Applicants respectfully request that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8603.

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Date

Muirhead and Saturnelli, LLC  
200 Friberg Parkway, Suite 1001  
Westborough, MA 01581  
508-898-8601 (main)  
508-898-8602 (fax)

Respectfully submitted,  
MUIRHEAD AND SATURNELLI, LLC

A handwritten signature in black ink, appearing to read 'Donald W. Muirhead', written over a horizontal line.

Donald W. Muirhead  
Reg. No. 33,978